

WHAT IS CLAIMED IS:

1. A communications system, comprising:
a plurality of service providers; and
at least one management unit, wherein the at least one
5 management unit selects at least one service provider of the plurality of service
providers and utilizes at least one service of the at least one service provider to
provide a communication session to at least one end user.

2. The communications system as recited in claim 1, wherein the
10 communication session is a VoIP session including at least one of a conference
call and a point-to-point call.

3. The communications system as recited in claim 1, wherein the at
least one end user contacts the at least one management unit through an access
15 network.

4. The communications system as recited in claim 3, wherein the
access network includes at least one of a wireless LAN, a LAN, the Internet, a
cable network, a cable gateway, a telephone company network, a public
20 switched telephone network, a wireless network and a wireless gateway.

5. The communications system as recited in claim 1, wherein a
signaling protocol of the communications system is session initiation protocol.

6. The communications system as recited in claim 1, wherein each service provider of the plurality of service providers is capable of providing at least one VoIP service.

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7. The communications system as recited in claim 1, wherein services of each service provider of the plurality of service providers are divided into service segments based on a predetermined criterion.

10 8. The communications system as recited in claim 7, wherein the predetermined criterion includes at least one of service location, service type, service duration, service timing and service quality.

9. The communications system as recited in claim 1, wherein the at
15 least one management unit virtualizes services of the at least one service provider and at least one other service provider of the plurality of service providers according to at least one service level agreement.

10. The communications system as recited in claim 9, wherein the at
20 least one service level agreement is at least one of: between the at least one service provider and the at least one other service provider; between the at least one management unit and the at least one service provider; and between the at least one management unit and at least one other management unit.

11. The communications system as recited in claim 1, further comprising a service level agreement at least one of: between the at least one service provider and at least one other service provider of the plurality of service providers; between the at least one management unit and the at least one service provider; between the at least one management unit and at least one other management unit; and between the at least one end user and an access network.

12. The communications system as recited in claim 1, wherein the at least one management unit works collaboratively with at least one other management unit to virtualize services provided by the at least one service provider and at least one other service provider of the plurality of service providers.

13. The communications system as recited in claim 1, wherein each service provider of the plurality of service providers is capable of providing at least one service for the communication session without knowledge of the communication session.

14. The communications system as recited in claim 1, wherein the at least one management unit includes an authorization unit for at least one of

identifying the at least one end user, determining rights of the at least one end user to request the communication session, and triggering a billing process.

15. The communications system as recited in claim 1, wherein the at
5 least one management unit includes a path calculation unit for at least one of calculating an optimal voice path, selecting the at least one service provider, and selecting a master management unit from the at least one management unit and at least one other management unit.

10 16. The communications system as recited in claim 15, wherein calculation of the optimal voice path and selection of the at least one service provider is based on at least one of a service level agreement, and session performance information.

15 17. The communications system as recited in claim 16, wherein the session performance information includes at least one of voice quality information, communication link status information and resource status information.

20 18. The communications system as recited in claim 1, wherein the at least one management unit includes a monitor unit for at least one of measuring voice quality for the communication session, defining service boundaries, and defining at least one service level agreement for the communication session.

19. The communications system as recited in claim 1, wherein the at least one management unit includes a database unit for storing at least one of service level agreement information, and session performance information.

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20. The communications system as recited in claim 1, wherein the at least one management unit includes a path setup unit for setting up an optimal voice path.

10 21. The communications system as recited in claim 20, wherein the at least one service provider includes at least one access point accessible under at least one service level agreement.

15 22. The communications system as recited in claim 20, wherein the optimal voice path includes at least one linear branch including the at least one service provider or the at least one service provider connected with at least one other service provider of the plurality of service providers.

20 23. The communications system as recited in claim 1, wherein the at least one management unit includes a communication unit for communicating between the at least one management unit and at least one other management unit.

24. The communications system as recited in claim 1, wherein the at least one management unit includes:

a path calculation unit for at least one of calculating an optimal voice path and selecting the at least one service provider;

5 a monitor unit for gathering performance information for the communication session; and

a path setup unit for setting up the optimal voice path.

25. The communications system as recited in claim 24, wherein the
10 path calculation unit uses the performance information gathered by the monitor unit to at least one of calculate the optimal voice path and select the at least one service provider.

26. A method for providing a communication session, comprising:

15 accessing at least one server for managing the communication session;

selecting at least one service provider of a plurality of service providers; and

utilizing at least one service of the at least one service provider to
20 provide the communication session to at least one end user.

27. The method as recited in claim 26, wherein the communication session is a VoIP session including at least one of a conference call and a point-to-point call.

5 28. The method as recited in claim 26, further comprising using session initiation protocol as a signaling protocol.

29. The method as recited in claim 26, wherein each service provider of the plurality of service providers is capable of providing at least one VoIP service.

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30. The method as recited in claim 26, further comprising dividing services of each service provider of the plurality of service providers into service segments based on a predetermined criterion.

15 31. The method as recited in claim 30, wherein the predetermined criterion includes at least one of service location, service type, service duration, service timing, and service quality.

32. The method as recited in claim 26, further comprising virtualizing
20 services of the at least one service provider and at least one other service provider of the plurality of service providers according to at least one service level agreement.

33. The method as recited in claim 32, wherein the at least one service level agreement is at least one of: between the at least one service provider and the at least one other service provider; between the at least one server for managing the communication session and the at least one service provider; and
5 between the at least one server for managing the communication session and at least one other server for managing the communication session.

34. The method as recited in claim 26, wherein each service provider of the plurality of service providers is capable of providing at least one service for
10 the communication session without knowledge of the communication session.

35. The method as recited in claim 26, further comprising at least one of identifying the at least one end user, determining rights of the at least one end user to request the communication session, and triggering a billing process.
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36. The method as recited in claim 26, further comprising:
calculating an optimal voice path; and
setting up the optimal voice path.

20 37. The method as recited in claim 26, further comprising at least one of measuring voice quality for the communication session, defining service boundaries, and defining at least one service level agreement for the communication session.

38. The method as recited in claim 37, further comprising using at least one of measured voice quality, the service boundaries and the at least one service level agreement to calculate an optimal voice path.

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39. The method as recited in claim 26, further comprising storing at least one of service level agreement information, and data regarding voice quality over at least one voice path.

10 40. The method as recited in claim 36, wherein setting up the optimal voice path includes:

establishing a first connection between the at least one service provider and the at least one server for managing the communication session;

15 establishing a second connection between the at least one service provider and at least one other service provider of the plurality of service providers; and

establishing a third connection between the at least one other service provider and at least one other server for managing the communication session.

20 41. The method as recited in claim 40, wherein the at least one service provider and the at least one other service provider each include at least one access point accessible under at least one service level agreement.

42. The method as recited in claim 26, further comprising establishing a communication line between the at least one server for managing the communication session and at least one other server for managing the communication session.

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43. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for providing a communication session, the method steps comprising:

10 selecting at least one service provider of a plurality of service providers;
and

 utilizing at least one service of the at least one service provider to provide the communication session to at least one end user.

15 44. The program storage device as recited in claim 43, wherein the communication session is a VoIP session includes at least one of a conference call and a point-to-point call.

 45. The program storage device as recited in claim 43, further
20 comprising instructions for using session initiation protocol as a signaling protocol.

46. The program storage device as recited in claim 43, wherein each service provider of the plurality of service providers is capable of providing at least one VoIP service.

5 47. The program storage device as recited in claim 43, further comprising instructions for dividing services of each service provider of the plurality of service providers into service segments based on a predetermined criterion.

10 48. The program storage device as recited in claim 43, wherein the predetermined criterion includes at least one of service location, service type, service duration, service timing, and service quality.

15 49. The program storage device as recited in claim 43, further comprising instructions for virtualizing services of the at least one service provider and at least one other service provider of the plurality of service providers according to at least one service level agreement.

20 50. The program storage device as recited in claim 49, wherein the at least one service level agreement is at least one of: between the at least one service provider and the at least one other service provider; between at least one server for managing the communication session and the at least one service

provider; and between the at least one server for managing the communication session and at least one other server for managing the communication session.

51. The program storage device as recited in claim 43, wherein each
5 service provider of the plurality of service providers is capable of providing at least one service for the communication session without knowledge of the communication session.

52. The program storage device as recited in claim 43, further
10 comprising instructions for performing at least one of identifying the at least one end user, determining rights of the at least one end user to request the communication session, and triggering a billing process.

53. The program storage device as recited in claim 43, further
15 comprising instructions for performing the steps of:
calculating an optimal voice path; and
setting up the optimal voice path.

54. The program storage device as recited in claim 43, further
20 comprising instructions for performing at least one of measuring voice quality for the communication session, defining service boundaries, and defining at least one service level agreement for the communication session.

55. The program storage device as recited in claim 54, further comprising instructions for using at least one of measured voice quality; the service boundaries and the at least one service level agreement to calculate an optimal voice path.

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56. The program storage device as recited in claim 43, further comprising instructions for storing at least one of service level agreement information, and session performance information.

10 57. The program storage device as recited in claim 56, wherein the session performance information includes at least one of voice quality information, communication link status information and resource status information.

15 58. The program storage device as recited in claim 53, wherein setting up the optimal voice path includes:

establishing a first connection between the at least one service provider and at least one server for managing the communication session;

20 establishing a second connection between the at least one service provider and at least one other service provider of the plurality of service providers; and

establishing a third connection between the at least one other service provider and at least one other server for managing the communication session.

59. The program storage device as recited in claim 58, wherein the at least one service provider and the at least one other service provider each include at least one access point accessible under at least one service level agreement.

60. The program storage device as recited in claim 43, further comprising instructions for establishing a communication line between at least one server for managing the communication session and at least one other server for managing the communication session.